

Document made available under the Patent Cooperation Treaty (PCT)

International application number: PCT/GB04/005352

International filing date: 21 December 2004 (21.12.2004)

Document type: Certified copy of priority document

Document details: Country/Office: GB
Number: 0420999.5
Filing date: 22 September 2004 (22.09.2004)

Date of receipt at the International Bureau: 17 February 2005 (17.02.2005)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)



World Intellectual Property Organization (WIPO) - Geneva, Switzerland
Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse



PCT/GB2004/005352



INVESTOR IN PEOPLE

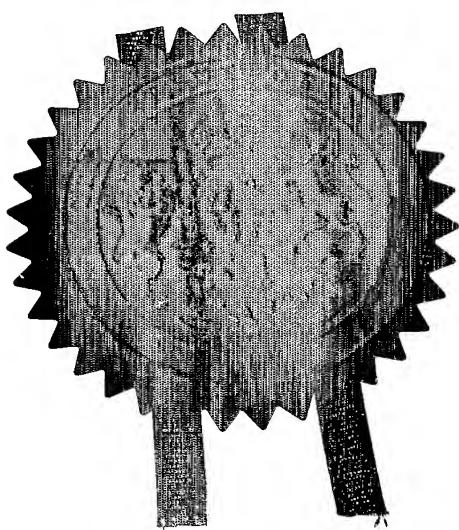
The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.



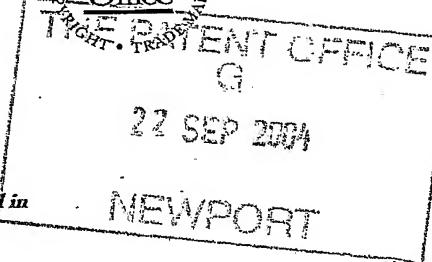
Signed

Dated 28 January 2005



Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)



The Patent Office

 Cardiff Road
Newport
South Wales
NP10 8QQ

1. Your reference

NEP/JM/2

2. Patent application number

22 SEP 2004

(The Patent Office will fill this part in)

0420999.5

3. Full name, address and postcode of the or of each applicant (*underline all surnames*)
 JOANNE LYNSEY MORGAN
 14 EATONS ROAD
 STAPLEFORD
 NOTTINGHAM
 N69 7EB
Patents ADP number (*if you know it*)

8778060001

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention

IMPROVEMENTS IN OR RELATING TO CLOTHING

5. Name of your agent (*if you have one*)
 "Address for service" in the United Kingdom
 to which all correspondence should be sent
(including the postcode)

 N E PARKER & CO
 THE ANNEX
 TAMEWAY TOWER
 BRIDGE STREET
 WALSALL
 WEST MIDLANDS
 WS1 1QD
Patents ADP number (*if you know it*)

8149809001

6. Priority: Complete this section if you are declaring priority from one or more earlier patent applications, filed in the last 12 months.

Country

Priority application number

(if you know it)

Date of filing

(day / month / year)

0329720.7

23/12/03

7. Divisionals, etc: Complete this section only if this application is a divisional application or resulted from an entitlement dispute (see note f)

Number of earlier UK application

Date of filing
(day / month / year)

8. Is a Patents Form 7/77 (Statement of inventorship and of right to grant of a patent) required in support of this request?

NO

Answer YES if:

- a) any applicant named in part 3 is not an inventor, or
- b) there is an inventor who is not named as an applicant, or
- c) any named applicant is a corporate body.

Otherwise answer NO (See note d)

9. Accompanying documents: A patent application must include a description of the invention. Not counting duplicates, please enter the number of pages of each item accompanying this form:

Continuation sheets of this form

Description	24
Claim(s)	8
Abstract	1
Drawing(s)	9 + 7

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for a preliminary examination and search (Patents Form 9/77)

1

Request for a substantive examination (Patents Form 10/77)

Any other documents (please specify)

TWO LETTERS

11. I/We request the grant of a patent on the basis of this application.

Signature(s)

Date 21.09.04

12. Name, daytime telephone number and e-mail address, if any, of person to contact in the United Kingdom

N E PARKER

01922 722243

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 08459 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- If you have answered YES in part 8, a Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- Part 7 should only be completed when a divisional application is being made under section 15(4), or when an application is being made under section 8(3), 12(6) or 37(4) following an entitlement dispute. By completing part 7 you are requesting that this application takes the same filing date as an earlier UK application. If you want the new application to have the same priority date(s) as the earlier UK application, you should also complete part 6 with the priority details.

IMPROVEMENTS IN OR RELATING TO CLOTHING

This invention relates to improvements in or relating to clothing and is more particularly
5 concerned with improvements in or relating to female underwear or breast support structures, such as brassieres.

Ladies fashion garments often have thin shoulder or neck straps or may be strapless and/or backless or halterneck (and/or transparent/translucent and/or very delicate and/or
10 may be nightwear/swimwear) and it is believed that known methods of breast support and/or enhancement with such garments under which a conventional brassiere cannot suitably be worn (herein after called 'garments of the type specified') tend to be disadvantageous or rather unsatisfactory, at least in some circumstances. The term 'thin strap' is meant to refer to a width of strap which cannot conveniently be employed to
15 completely cover a brassiere strap.

Of course, if conventional brassieres (shoulder-strap or halter neck) were to be worn with such garments the straps of the brassieres would be visible or apparent and spoil the desired effect of the garment.

20

Many proposals have been made in an effort to provide suitable breast support or enhancement with garments of the type specified, ranging from brassieres with transparent plastics straps or straps which crisscross low down on the back, for example, around the waist, or strapless brassieres that comprise an underwire and cups that are
25 attached to the breasts by double-sided, disposable dermal adhesive tape. It is believed that none of these arrangements are entirely satisfactory. For example, where

transparent straps are provided on the brassiere, these can, nevertheless, still be seen on the body, for example around the shoulders or neck, or wherever the straps lie and are not really comfortable or reassuring for the wearer. Once again, brassieres that include crisscross straps that wrap around the waist are necessarily designed in such manner that they tend to squash the breasts rather than support and uplift them and tend to be disadvantageous in that the straps may create unsightly ridges of flesh detectable underneath the garment. The use of adhesive tape on the breasts to attach the brassiere is far from ideal and often does not work at all well for a substantial period of time, so that the brassiere will simply become detached from the wearer. Additionally, the double-sided tape tends to be relatively expensive and can only be used once. Also, the adhesive may adhere quite strongly to the body necessitating considerable pain or discomfort for the wearer to remove the adhesive completely. Furthermore, it is believed that a relatively natural look is very difficult to achieve with such brassieres that tend not to lift and support the breasts in the manner required. Rather, such brassieres tend to be confining and may pull the breasts downwardly or create unnatural bulging, depending upon the particular size, shape and uniformity of breasts. In summary, some brassieres for such garments, disadvantageously, may have a low back or clear strap back (or even a halter neck strap) or include breast cups that have to be attached by adhesive tape to the wearer and which extend around the side of the body.

Other brassieres for such garments, disadvantageously, may not lie completely flat on the skin and may be seen or detected through the garment covering the brassiere more particularly where the garment is of delicate or thin fabric material, said garment, for example, being evening wear where such brassieres are usually required. With some strapless and backless brassieres requiring the use of adhesive tape, the downward force of gravity on the breasts has to be balanced using the friction of the brassiere against the skin of the breast and, since such brassieres have a relatively small surface area, flesh

may be pinched and effectively squeezed out of the sides of the brassiere. Indeed, this problem seems to be more acute where the strapless and backless brassiere is a convertible brassiere (i.e. a brassiere having straps that can be removed from the brassiere if desired for use with certain garments) which needs to be worn more tightly
5 when used without straps in a backless and strapless garment scenario. Even so, the problem may occur with low back, strapless or halter neck brassieres or where the brassiere straps are thin or transparent (as such straps tend to press or dig into the skin to a greater extent causing ridges of flesh on the body).

10 Once again, it is believed that known backless/strapless brassieres do little to compensate for the difference in size between the breasts that most women have so that the breasts may not lie level when supported by the brassiere. It tends to be disadvantageous that some backless/strapless brassieres may alter the appearance or outer shape of the garment when worn in a way not desired by the wearer. Such
15 backless/strapless brassieres tend to be disadvantageous in that many different sizes are required for different sizes of breast and sometimes such set sizes tend not to fit very well more particularly where the wearer has a significant size difference (e.g. one cup size) between her breasts. Also, there would appear to be few such brassieres on the market for cup sizes over a 'C' cup. There are some such brassieres for cup sizes larger
20 than a 'C' but they tend to be disadvantageous as they may drag the breasts downwardly to some extent requiring more or less constant re-adjustment by the wearer. This is why there tends to be more choice in brassieres of cup size under a 'C' cup i.e. because it would appear easier for brassieres of this type to support smaller breasts. Furthermore, some backless/strapless brassieres tend to be too firm or rigid and impart an unnatural
25 rigidity or look to the breasts when viewed through, or from outside of, the covering

garment. Brassières for garments of the type specified may have other additional disadvantages not discussed further in this specification.

It is known to provide a breast support in the form of a sling or shelf for supporting both
5 breasts simultaneously without covering the nipples, thus allowing a greater freedom. However, the sling or shelf includes adjustable shoulder straps which would be visible with garments of the type specified and thus would not be suitable for such garments.

It is an object of the present invention to at least alleviate one or more of the
10 aforementioned, or other, disadvantages associated with breast support and/or breast enhancement for garments of the type specified.

According to the present invention there is provided breast support apparatus for supporting at least one breast from underneath a covering garment of the type specified,
15 said apparatus comprising at least one sling or wrap of material arranged in use to lift and support said breast, said sling or wrap being suspended, in use, from the garment, or on the body of the wearer from underneath the garment.

Usually, said breast support apparatus will be without shoulder and/or neck and/or back
20 support straps.

Further according to the present invention there is provided a garment of the type specified having at least one breast support apparatus attached or attachable thereto in order to suspend the breast support apparatus, said breast support apparatus comprising
25 a sling or wrap of material for supporting at least one breast in use.

Further according to the present invention there is provided breast support apparatus in the form of a sling or wrap of material for suspending at least one breast from a garment of the type specified in use, said apparatus including suspension means for the sling/wrap of material, said suspension means being attachable to a garment of the type specified to be worn with the breast support apparatus. The sling/wrap of material may 5 be releasably fastenable to the suspension means.

Further according to the present invention there is provided a method of supporting at least one breast, said method comprising suspending said breast in a sling or wrap of 10 material and supporting the sling or wrap of material on a garment of the type specified or on a body of the wearer from underneath a garment of the type specified and, preferably, from a location at or above an upper portion of the breast.

Usually, the breast support apparatus will be adapted to support an individual breast (so 15 that two such breast support apparatuses will normally be required for one wearer) although in other embodiments both breasts may be supported simultaneously side by side by said breast support apparatus (particularly applicable for larger breasts).

By embodiments of the present invention the sling or wrap of material of the breast 20 support apparatus can be arranged to lift and support the or each breast giving some shaping to same by suspending the breast against the force of gravity, preferably, from a location or locations at or above an upper portion of the breast/s or at least from above the nipple/s of the breast/s.

25 Further according to the present invention there is provided breast support apparatus for supporting at least one breast from underneath a covering garment of the type specified,

said apparatus including means for lifting and supporting said breast, said means being suspended, in use, from a location or locations above the nipple of said breast, said location or locations being from the garment or on the body of the wearer from underneath the garment. Said means for lifting and supporting the breast may comprise
5 a sling or wrap of material.

Preferably, the sling or wrap of material is flexible and may be elasticated or 'stretchable' and may grip the breast/s preferably in a non-slip manner. Preferably, the sling or wrap of material does not have a preformed shape and may adapt at least in part
10 to the shape and/or size of the or each breast.

Even so, it is possible in some embodiments of the invention that the sling or wrap of material is provided with padding material such as foam which may conveniently be in the form of a suitably shaped insert or inserts. Preferably, the insert or inserts is/are
15 readily removable from the sling or wrap of material and replaceable with a different size/sizes to suit the wearer.

The sling or wrap of material may be releasably fastenable to the garment of the type specified to be worn with the breast support apparatus or may be permanently or semi-
20 permanently attached thereto.

Where a releaseable fastening to the garment is provided as aforesaid, said fastening may be of any suitable means such as one or more press studs or surface contact fastening material such as Velcro (Velcro is a registered trade mark) or means such as a
25 button and receiving hole, or hole that receives a loop, or tie of the sling or wrap material. The suspension means may comprise a strip of material on which is mounted

part of the releasable fastening with the remainder of the releasable fastening being provided on the sling/wrap of material e.g cooperating female part of a press stud may be provided on said material strip where male press stud part is on the sling or wrap of material. Said strip of material may be connected to the garment by any convenient means such as by stitching and/or heat activated adhesive.

In some embodiments of the present invention, the fastening location or locations of the sling/wrap of material to the garment may be adjustable (more particularly in the height direction of garment). In this way where two breast support apparatuses are provided 10 (one for each breast), if necessary, one breast may be supported from a higher point on the garment than the other in order to even up the position of the breasts where there is a lack of uniformity or considerable size difference between same.

Conveniently, the fastening location of the or each breast support apparatus may be 15 provided on an upper inside edge of the garment (near an associated shoulder or neck support strap on the garment if provided).

Additionally, or alternatively, each breast may be provided with associated breast support apparatus comprising a sling or wrap of material of a different size or shape to 20 the other in order to achieve a more uniform or balanced overall appearance.

It is possible that the or each breast may be supported by said sling or wrap of material which is suspended from a location or locations on the body rather than on the garment itself. In such an instance, the sling or wrap of material may be, for example, supported 25 by (possibly double-sided) dermal adhesive tape located at or above an upper portion of the breast. It is believed in such a scenario that the breast/s will be held more securely

- by the adhesive tape than when the breast is supported from underneath by e.g. a semi-rigid cup connected by double-sided adhesive tape to the underneath curved part of the breast. In practice, where double-sided adhesive tape is used to attach a strapless and backless brassiere to a curved part of the breast, the brassiere can become detached
- 5 from the breast more easily than should be the case. However, it is envisaged that, where double-sided adhesive tape is used in conjunction with the sling or wrap of material in accordance with the present invention, the adhesive tape means be attached to an upper part of the breast/s which should not give rise to problems in detachment.
- 10 Usually, the ends of the sling or wrap of material will be close to one another when worn on the breast/s and may, for example, be connected closely adjacent to one another on the garment to be worn. It is possible that the ends of the sling or wrap of material may be connected together before the sling or wrap of material is connected to the garment so that there is only a single attachment location on the garment for the
- 15 sling or wrap of material. However, it is also possible for the ends of the sling or wrap of material to be connected to the garment at spaced locations if required. Even so, usually, the ends of the sling or wrap of material will be close to one another on the garment (or a single attachment location is provided), since it is believed this will provide a better support and uplift than if the sling/wrap of material is connected to the
- 20 garment at relatively widely spaced locations. On other occasions, a different feeling or effect may be desired by the wearer, which would suit the ends of the sling or wrap of material being connected to the garment at spaced locations.

It is believed that creating a sling or wrap of material for the breast/s which forms a

25 closed hoop of "stretchable" material surrounding snugly and hugging and lifting the breast/s, which is suspended from a point at or above the upper portion of the breast/s,

effectively lifts and cradles the breast/s providing a much more natural and enhanced appearance than current brassieres for garments of the type specified.

The sling or wrap of material may leave the nipple/s of the breast/s exposed prior to coverage with the garment to be worn with same and, thus, the breast support apparatus may also include separate or integral nipple cover means for modesty purposes.

Whilst one breast apparatus may be used to support both breasts simultaneously this may move the breasts more closely together than might be wished for with some shapes and sizes of breasts.

Thus, it is believed that the employment of two individual breast support apparatuses (one for each breast) may prove to be the most advantageous embodiment of the present invention at least for smaller breasts. It is believed that individual slings or wraps of material for each breast should give the maximum uplift and shaping to both sides of the breast and allow the most advantageous, natural, if damped, swing of the breasts relative to the garment.

Many other advantageous features of the present invention will be apparent from the following description and drawings.

An embodiment of breast support apparatus in accordance with the present invention, will now be described, by way of example only, with reference to the following somewhat diagrammatic drawings, not drawn to scale, in which:-

FIGURE 1 shows a plan view of breast support apparatus for an individual breast;

5 FIGURE 2 shows an inside-out view of a garment of the type specified to be worn with two breast support apparatuses of FIGURE 1;

10 FIGURE 3 shows a view of the upper half of a girl wearing an associated breast support apparatus as shown in FIGURE 1 on each breast, said breast support apparatuses being connected to the garment as shown in FIGURE 2;

FIGURE 4 shows a front view of one of the girl's breasts shown in FIGURE 3 fitted with the breast support apparatus of FIGURE 1:

15 FIGURES 5a, 5b, 5c, 5d show four views of alternative suspension means for fastening the breast support apparatus that may be attachable to the garment in FIGURE 2, and

20 FIGURES 6a, 6b show two alternative underside views of the suspension means shown in FIGURES 5a – 5d.

Referring to FIGURE 1 of the drawings, breast support apparatus 1 adapted for supporting an individual breast includes a suitably shaped length of material M.

25 The breast support apparatus 1 may include any suitable material M such as an elasticated or "stretchable" (preferably non-slip) fabric that could be of cotton/polyester

or woven or knitted construction or which may, for example, be of lace. The material M may be single, double or multi-layered and may or may not comprise a suitably shaped pocket 2 (shown for convenience as rectangular dashed lines) for a suitably shaped insert of foam padding or the like that could be used to enhance or increase the apparent size of the breast.

In this particular embodiment, the length of the breast support apparatus 1 is 23 cm and the width is 8 cm, with the length of the upper and lower parallel straight sides S1, S2 being 14 cm each. Each end of the breast support apparatus 1 is shaped inwardly by oppositely curved side edges 1a, 1b; 1c, 1d towards male press stud portions 3a, 3b that seat in respective female press stud portions 101a, 101b; 101c, 101d mounted on suspension means in the form of a rectangular strips of material 400 on the inside of a flimsy garment 100 of the type specified having thin shoulder straps s1, s2 (see FIGURE 2 and FIGURE 5b). The male press stud portions 3a, 3b each comprise one half of co-operative releasable fastening means 3a, 3b; 101a, 101b for the ends of the breast support apparatus 1. The female press stud portions 101a, 101b on the garment form the mating halves of the releasable fastening means for said breast support apparatus 1. The female press stud portions 101a, 101b are shown in enlarged detail in FIGURE 5b. The shoulder straps s1, s2 are only shown in part for ease of illustration. The garment 100 is in the form of a top of semi-transparent material D through which bra straps of a conventional brassiere would be visible.

In use of the breast support apparatus 1 by a wearer (more particularly as shown by the girl 200 in FIGURE 3) each individual breast 201 is initially encircled from underneath and supported in a manner with the apparatus 1 (means for lifting and supporting the

- breast 201) acting as a sling or wrap around the breast from underneath to lift and support same. The curved shaping of the apparatus 1 allows the formed sling to sit neatly on the breast 201 without causing undue stress in the region where the breast meets the body. Advantageously, the breast 201 is gripped by the stretchable material of the sling to hold the breast in a non-slip manner. Once one breast 201 has been encircled by the associated breast support apparatus 1 and the ends of same brought close together, male press stud portions 3a and 3b can be releasably connected to female press stud portions 101a, 101b or 101c, 101d to suspend the apparatus 1 and hence the associated breast 201 from the garment 100. The other breast may be suspended from a second breast support apparatus 1 in a similar manner with male press-stud portions 3a, 3b being engaged into the vacant female press stud portions 101a, 101b or 101c, 101d.
- It is to be noted that the garment 100 includes very thin straps s1, s2 that pass around the neck of the girl shown in FIGURE 3 and which may, for example, be part of a halter neck of a garment. The garment 100 could not be worn with a conventional brassiere having straps since the straps could not be hidden from view by the thin straps 102, 103.
- Accordingly, two breast support apparatuses 1 may be worn with the garment 100 to lift and support the breasts in a discreet manner.
- Since each breast 201 is supported individually by separate support apparatus 1, it is believed that a more natural look may be obtained, more particularly where the nipples 201a are only covered by the garment 100 itself.

It is to be appreciated that the breast support apparatus has not been provided with inserts in FIGURE 3 of the drawings.

5

FIGURE 4 of the drawings shows a front view of an individual breast 201 supported by breast support apparatus 1 (FIGURE 1). Since the breast 201 is supported by the support apparatus 1 which acts in the manner of a sling, it is believed that better lift and support is given to the breast, from underneath and from both sides, more particularly by forces acting in directions of arrows a and b in the FIGURE. Thus the breast 201 itself is not squashed or flattened out or lifted directly from underneath in a manner which could cause bulging. Importantly, the breast 201 is fully supported in an area extending outwardly from the junction of the breast with the body rather than merely from underneath at a location spaced from said junction. Thus, the breast support apparatus 1 hugs the contour of the breast 201.

In an alternative embodiment of the present invention (not shown), the connection or fastening location on the garment for the fastening means on the breast support apparatus 1 may be adjustable (preferably height adjustable) by any suitable means so that where there is a significant discrepancy between the size or shape of the breasts, one breast may be supported at a location on the garment which is higher than the other if one breast needs more lift and support than the other to provide a more uniform balanced appearance. The height adjustment may be continuously adjustable or provided by a number of preselectable positions.

25

Instead of providing such a height adjustable connection on the garment 100 itself, a different size of breast support apparatus 1 may be used for the second breast so that each may be supported from a similar height location on the garment with the second breast support apparatus 1 having different support parameters that will allow 5 the second breast to be lifted higher relative to the first.

FIGURES 5a – 5d show variant suspension means 400', 400, 400'' and 400''' having different fastening or connection means of the brassiere support apparatus 1 to the garment 100. FIGURE 5a shows a rectangular piece of material 400' including the 10 female portion 401 of a press-stud fastening that may be co-operable with a single male press stud portion, not shown on the breast support apparatus 1, rather than two male press stud portions being provided, and FIGURE 6a shows an underside view being provided with a self-adhesive backing 402 that may be heat activated, for example, by an iron, to attach same to garment 100. Such an arrangement may be used with the 15 single press-stud arrangement shown in FIGURE 5a or the double press-stud arrangement shown in FIGURE 5b.

FIGURE 5c shows an alternative fastening arrangement having a rectangular piece of material 400'' with a button B that may be co-operable with one or more loops or 20 button holes (not shown on the breast support apparatus1) instead of press stud fastenings 3a,3b;101a,101b. Similarly FIGURE 5d may be provided with a right-angled slot C for ties (not shown) on the breast support apparatus 1 to pass therethrough and be tied on the reverse side of strip 400'''.

Additionally, or alternatively, the reverse side of the strip of material 400, 400', 400'', 400''' may be provided with pre-placed stitch holes p as shown in FIGURE 6b for attachment or added securement to the garment 100.

5

The aforescribed embodiment of the present invention provides for the breast apparatuses 1 to be releasably suspended from spaced locations on the garment 100. However, the connections of the breast support apparatuses 1 to the garment 100 may be effectively permanent or semi-permanent or alternatively the breast apparatuses 10 could be suspended directly from the wearer's body (for example by double-sided adhesive tape, conveniently attached to an upper portion of the associated breast, or from above the breast, but underneath the garment 100).

Although not shown, in an alternative arrangement the breast support apparatus may 15 comprise a sling or wrap of material that encircles both breasts rather than just an individual breast. Thus only one central upper suspension location for such breast support apparatus (either on the garment or the body of the wearer may be required).

It is possible that the breast support apparatus in accordance with the present invention 20 is more cup-shaped or bag-shaped covering more of the breast 201 than as shown in FIGURES 3 and 4 of the drawings. It is also possible that the breast apparatus 1 could be stretched to cover more or less of the breast as desired to suit the wearer.

Advantages of embodiments of the present invention may be as follows:-

25 1. A true backless breast support apparatus may be provided.

2. No lines, creases or wrinkles viewable through or from outside of the garment of the type specified.
- 5 3. No adhesion of the breast support apparatus to the underside of the breasts.
4. Much greater variety of sizes available for garments of the type specified due to greater uplift.
5. No encircling of the trunk of the body by the breast support apparatus.
6. Breast support apparatus may be an accessory to the garment or part of the garment.
- 10 7. Where two breast support apparatuses are required, said apparatuses can be sold in a variety of different forms and connected to the suspension means.
8. There may be an attachment point to the garment with respect to breast position.
9. Adjustability or support apparatuses to cater for differently sized breasts so they appear to be level underneath the garment.
- 15 10. A single, double or multiple point of attachment may be provided for by the breast support apparatus.
11. Pre-cut sewing holes may be provided and fasteners by a variety means some of which may be readily available on the market.
- 20 12. The breasts support apparatuses may be sewn on (attached) in a shop or as part of a tailored service.
13. An (adjustable) arrangement may be provided so that only one size of breast apparatus need be provided for differently sized breasts.
- 25 14. The breast support apparatus may be much less expensive to manufacture than brassieres for garments of the type specified.

15. The breast apparatus may be produced in a variety of fabrics, and there could be
a variety of fabrics and materials involved to support the breast in different
(enhanced) ways, more particularly depending upon the nature of the garment of
the type specified being worn and the type of breast support desired by the
wearer.
- 5
16. A breast cover/s may be provided to cover the nipples. It is to be noted that the
breast cover/s may be designed to perform an additional support function to
merely covering the nipple, more particularly where the breast is relatively soft
and fluid. Relatively soft and more fluid breasts may occur more regularly in
older females and such breasts may be more difficult to support adequately
using a sling which allows a soft breast to locally deform causing 'flow' or
'hang' over the sling of part of the breast. The additional support function
provided by the cover may be to alleviate such flow or hang over occurring. The
nipple cover may cover substantially the entire breast.
- 10
- 15
17. The breast support apparatus does not have to be a preformed rigid cup that
could yield an undesirable false appearance to the breast.
18. Garments of the type specified could include: swimsuits, bikinis, halterneck,
strappy, delicate, low-back and backless garments or nightwear and the breast
support apparatus could also be worn with any garment rather than just garments
of the type specified thus obviating the need for different types of breast support
apparatus with different garments.
- 20
19. The breast support apparatus may be more delicate and/or sensual than other
apparatus provided for garments of the type specified.
- 25
20. The breast support apparatus may not be rigid although parts may be in some
embodiments

21. May not alter the shape of the garment at all since the breast apparatus may work within or be determined by the contours of the breast itself and may be to all intents and purposes substantially undetectable whilst the garment is being
5 worn.

It is to be appreciated that the present invention offers many improvements, at least some of which might be patentable individually or in combination. Any individual feature as aforementioned or as shown or implicit herein or combinations thereof, or
10 functions or methods appertaining thereto, may be patentably inventive and any specific term as used herein should not be construed as unnecessarily or unduly limiting; the scope of such a term should extend to, or may be replaced or supplemented by, any equivalent or generic expression. For example the term 'sling' could be replaced by 'strap' or 'strip' or 'flexible support' or 'suspension apparatus' or 'means for supporting
15 a breast'; 'breast support apparatus' may be replaced by 'breast re-shaping or breast mass redistribution apparatus'. Additionally, any range mentioned herein for any parameter or variable shall be taken to include a disclosure of any derivable sub-range within that range or of any particular value of the variable or parameter arranged within, or at an end of, the range or sub-range. The singular may include the plural and vice
20 versa.

Therefore, still further according to the present invention there is provided breast support apparatus for supporting at least one breast from underneath a covering garment, said apparatus comprising an adjustable sling or adjustable means for
25 encircling or partially encircling and supporting said breast, the size of said sling or

means encircling/partially encircling the breast being (automatically) adjustable to cater for different sizes of breast and or size difference between two breasts of a wearer.

The Applicant has made further improvements or modifications to the breast support apparatus.

5 Accordingly, further embodiments of breast support apparatus in accordance with the present invention, will now be described, by way of example only, with reference to the further accompanying drawings, in which :-

FIGURE 7 shows a flattened, inside-out, side view of a second embodiment of breast support apparatus in accordance with the present invention;

10 FIGURE 8 shows an outside, front perspective view of the breast support apparatus shown in FIGURE 1 shaped ready to fit onto a breast;

FIGURE 8a shows diagrammatically the format of the support apparatus of FIGURES 7 and 8 before the ends thereof are connected together to form a closed loop;

15 FIGURE 8b shows diagrammatically how a breast can be lifted and reshaped by the breast apparatus in FIGURES 7,8, and 8a;

FIGURE 9 shows an inside view of a bikini top which has been laid flat and which includes a third embodiment of breast support apparatus in accordance with the present invention in each bikini cup;

20 FIGURE 10 shows an enlarged view of the bikini with the cups of the bikini moved so that each breast support apparatus has been pulled to one side of the associated bikini cup, and

FIGURE 11 shows front and side views of a girl wearing breast support apparatus in accordance with FIGURES 7 and 8 on her left breast only.

- Referring to FIGURES 7, 8, 8a and 11 of the drawings a breast support apparatus 500 for use with any garment, for example the dress D shown in FIGURE 11, includes a
- 5 sling or wrap of material 501. The sling or wrap of material 501 is elasticated or 'stretchable' and non-slip, for example, being of cotton/polyester or being of any materials as described in relation to the breast apparatus 1 shown in FIGURE 1. The sling or wrap of material 501 has been shaped as shown with the ends 501a, 501b being narrowed to the width of elasticated, connecting strap 502, said ends 501a, 501b being
- 10 joined to the strap and to one another, for example, by appropriate stitching. The ends 501a, 501b of the strap are passed through an opening in metal connecting buckle 503 of the connecting strap 502. The connecting strap 502 may be used to connect or hook the breast apparatus 501 to an appropriate location on an outer garment (for example, to dress D by means of open end buckle 504, if desired).
- 15 Even so, it has been found that the breast support apparatus 500 is so advantageous and supportive that, in most cases, there will be no need to actually attach the breast support apparatus 500 to any supporting garment at all.

As will be evident from FIGURE 7, the breast support apparatus 500 includes a strip of silicone or other grip material 505 (possibly adhesive tape) which, in use, will be

20 arranged to support the breast from underneath in the area of the breast that adjoins the body. Once again, the ends 505a and 505b of the silicone strip 505 are curved and narrowed in the same way as the ends 501a, 501b of the sling material 501 (see FIGURE 8a). The silicone 505 or other grip material may be sprayed onto the sling material 501.

The top rim of the breast support apparatus 500 has been edged with a material strip 506, by stitching 506a ; a further line or seam of stitching 507 (see FIGURE 7) runs from the central front part 508 of the apparatus 500 to the inner edge 505c of the stick on strip. The seam helps create the shape of the apparatus 500 in this 5 embodiment.

In tests using the breast support apparatus 500, it has been found that said apparatus will adhere extremely successfully to the breast, through use of the silicone strip 505 and reshape the breast , more particularly, due to the reduction in width of the silicone strip 505 and sling 501 towards the ends by tapering or curving gradually along section s of 10 the sling (which, in use, will be on an upper part of the breast). Thus, the whole breast is very satisfactorily supported, shaped and enhanced and more rounded in appearance.

In fact, the breast support apparatus 500 acts to reshape or redistribute the mass of the breasts (more particularly where the breast has already lost a lot of its original shape and support and may sag) to provide a much more flattering appearance.

15 The silicone strip 505 helps to prevent the apparatus 505 moving around relative to the breast and helps retain the breast in its new shape.

It is to be noted (see FIGURE 8a – connecting strap 502 omitted for clarity) that the ends 501a, 501b of the sling 501 and the ends 505a, 505b of the silicone strip 505 are only narrowed from the inner edge (leaving a straight outer edge 505d) that may be 20 wrapped around into a circular shape on the breast unlike the shape of the ends on the breast support apparatus shown in FIGURE 1 of the drawings, where each end of the apparatus 1 is shaped inwardly by oppositely curved side edges 1a, 1b; 1c, 1d.

FIGURE 8b shows how a breast B can be rounded and reshaped to the format B' shown in dashed lines by forces acting generally in direction of the arrows Z. In practice, the breast B' may be considerably higher than shown in FIGURE 8b.

5 FIGURE 11 shows the remarkable results that can be obtained utilising the breast apparatus 500.

It is very important to realise, advantageously, that the format of breast apparatus 500 can be used successfully with any size of breast (particularly large breasts) to lift and support and re-shape same whereas, e.g. 'stick-on' or 'roll-on' breast cups can really only be utilised up to a C-cup.

10 FIGURE 11 shows the application of the breast support apparatus to the left breast only as viewed underneath a dress D. Immediately, it can be seen how the breast support apparatus 500 can lift and reshape the breast compared to the right breast which is unsupported underneath the dress D. It is to be noted in this instance, that the left breast is very much higher than the right breast. It is to be appreciated in FIGURE 11 that the
15 breast apparatus 500 has not been attached to the dress D itself; it has simply been wrapped around and fixed onto the breast in a supporting and reshaping manner.

FIGURES 9 and 10 show views of a bikini top 600 including a breast support apparatus 700 attached to each generally triangular bra cup 601, 602.

As should be evident from FIGURES 9 and 10 each breast support apparatus 700
20 consists of a strip of fabric of similar shape to the breast apparatus 1 shown in FIGURE 1 of the drawings without the press stud portions 3a, 3b. The ends of the breast support apparatus 700 are attached (for example by stitching or press studs if desired) as shown. The upper end 700a of each bra apparatus 700 is attached to the inner, top, apex edge of

the respective bikini cup, 601, 602 and the lower end 700b of each apparatus 700 is attached close to the inner apex or corner of each cup 601, 602 along the bottom edge thereof.

In use of the bikini top 600 and breast support apparatus 700, each apparatus 700 will be

- 5 moved or stretched generally in the direction of arrow X from the centre to move the apparatus 700 around the outside periphery of the breast to partially encircle or wrap around all of the underside of each breast from the central cleavage around the outside of each breast to a point uppermost on the breast which would generally be vertically above the nipple.

- 10 In this way, each breast apparatus 70 supports and reshapes the breast giving lift and pushing the breasts together for mutual support at the cleavage.

In practice, whilst the attachment of each breast apparatus 70 may appear to be a relatively simple support means it is surprising just how effective such support is merely by the employment of the breast apparatus 70 in the form of a partial wrap or partial sling on each breast.

The bikini top has straps 603 and 604 leading from the upper apex of each cup before attaching them together around the neck of the user. The outside apex of each cup 602 has an associated strap 605, 606 and these straps can be tied together around the back of the user.

- 20 Therefore, still further according to the present invention there is provided a garment, such as a bikini top, including two breast cups, each breast cup including a breast support apparatus, preferably, diagonally mounted or inclined on the associated cup, preferably extending from adjacent an upper apex of the associated cup and extending downwardly in use to a lower location on each cup.

Further according to the present invention there is provided a breast support apparatus for the garment as described in the immediately preceding paragraph.

Each breast apparatus may comprise a strip of material that acts in use to support the breast underneath and from an outside edge to partially encircle the breast, pulling the
5 breast upwardly and inwardly towards the cleavage of the breasts.

CLAIMS

1. Breast support apparatus for supporting at least one breast from underneath a covering garment of the type specified, said apparatus comprising at least one sling or wrap of material arranged in use to lift and support said breast, said sling or wrap being suspended, in use, from the garment, or on the body of the wearer from underneath the garment.
5
2. Apparatus as claimed in claim 1 without shoulder and/or neck and/or back support straps.
10
3. Apparatus as claimed in claim 1 or claim 2 in which the at least one sling or wrap of material is adapted to support an individual breast
15
4. Apparatus as claimed in claim 1 or claim 2 in which, in use, both breasts may be supported simultaneously side by side by said at least one sling or wrap of material.
5. Apparatus as claimed in any one of the preceding claims in which the at least one sling or wrap of material can be arranged to lift and support the or each breast giving some shaping to same by suspending the breast against the force of gravity.
20
6. Apparatus as claimed in claim 5 in which the or each breast is suspendable, in use, from a location or locations at or above an upper portion of the associated breast/s or at least from above the nipple/s of the breast/s.

7. Apparatus as claimed in any one of the preceding claims in which the at least one sling or wrap of material is flexible.
 - 5 8. Apparatus as claimed in claim 7 in which the at least one sling or wrap of material is elasticated or 'stretchable.'
 9. Apparatus as claimed in claim 8 in which the at least one sling or wrap of material can grip the breast/s in a non-slip manner.
- 10
10. Apparatus as claimed in any one of claims 7 to 9 in which the sling or wrap of material does not have a preformed shape and can adapt at least in part to the shape and/or size of the or each breast.
- 15
11. Apparatus as claimed in any one of the preceding claims in which the sling or wrap of material is provided with padding material.
 12. Apparatus as claimed claim 11 in which the padding material is in the form of a suitably shaped insert or inserts.
- 20
13. Apparatus as claimed claim 12 in which the insert or inserts is/are readily removable from the sling or wrap of material and replaceable with a different size/sizes to suit the wearer.

14. Apparatus as claimed in any one of the preceding claims in which the sling or wrap of material is permanently or semi-permanently attached to the garment of the type specified.
- 5 15. Apparatus as claimed in any one of the preceding claims in which the sling or wrap of material is releasably fastenable to a garment of the type specified.
- 10 16. Apparatus as claimed in claim 15 in which said releasable fastening comprises one or more press studs or surface contact fastening material or means such as a button and receiving hole, or hole that receives a loop, or tie of the sling or wrap material.
- 15 17. Apparatus as claimed in claim 16 having suspension means for the sling or wrap in the form of a strip of material on which is mounted part of the releasable fastening with the remainder of the releasable fastening being provided on the sling/wrap of material.
18. Apparatus as claimed in claim 17 in which said strip of material is connected or connectable to the garment by stitching and/or (heat activated) adhesive.
19. Apparatus as claimed in any one of claims 14 to 18 in which the fastening location or locations of the sling/wrap of material to the garment is/are adjustable.
- 20 20. Apparatus as claimed in claim 19 in which the fastening location/s is/are adjustable in the height direction of the garment, in use.
- 25 21. Apparatus as claimed in claim 20 including two slings or wraps such that one breast can be supported from a higher location on the garment than the other, in use.

22. Apparatus as claimed in any one of claims 14 to 21 in which the fastening location of the or each sling or wrap is, in use, provided on an upper inside edge of the garment (near an associated shoulder or neck support strap on the garment if provided).
- 5 23. Apparatus as claimed in any one of the preceding claims comprising slings or wraps of material of a different size or shape to one another.
24. Apparatus as claimed in any one of the preceding claims in which the at least one sling or wrap of material is, in use, supported by adhesive tape located at or above an
10 upper portion of the breast.
25. Apparatus as claimed in claim 24 in which the adhesive tape is double-sided.
26. Apparatus as claimed in any one of the preceding claims in which the sling or wrap
15 of material has ends which are close to one another when worn on the breast/s.
27. Apparatus as claimed in claim 26 in which the ends are connected closely adjacent to one another on the body or garment to be worn.
- 20 28. Apparatus as claimed in claim 27 in which the ends of the sling or wrap of material are connectable together before the sling or wrap of material is connected to the garment or before placement around the breast so that there is only a single attachment location on the garment or body for the sling or wrap of material.
- 25 29. Apparatus as claimed in any one of claims 1 to 25 in which the ends of the sling or wrap of material are connectable to the garment at spaced locations.

30. Apparatus as claimed in claim 29 in which said spaced locations are relatively close to one another.
- 5 31. Apparatus as claimed in any one of the preceding claims in which the sling or wrap of material leaves the nipple/s of the breast/s exposed prior to coverage with a garment to be worn with said apparatus.
- 10 32. Apparatus as claimed in claim 31 including separate or integral nipple cover means.
- 15 33. Apparatus as claimed in any one of the preceding claims having a strip of silicone material or the like for gripping a breast close to the body of the wearer.
34. Apparatus as claimed in claim 33 in which the silicone material is sprayed onto the sling or wrap.
- 20 35. Apparatus as claimed in any one of the preceding claims in which the ends of the sling/wrap are narrowed, curved or tapered.
- 25 36. Apparatus as claimed in claim 35 in which said narrowing, tapering or curving is from an inside edge of the sling/wrap with an outside edge thereof being substantially straight.
37. Breast support apparatus substantially as herein described with reference to FIGURE 1, or FIGURES 7 to 8a, or FIGURES 9 and 10 of the accompanying drawings or with reference to FIGURE 1 and including suspension means as shown in any one of FIGURES 5a-5d, 6a, 6b.

38. A garment of the type specified having at least one breast support apparatus attached or attachable thereto in order to suspend the breast support apparatus, said breast support apparatus comprising a sling or wrap of material for supporting at least one
5 breast in use.

39. A garment including breast support apparatus as claimed in any one of claims 1 to
38.

10 40. A garment substantially as herein described with reference to FIGURE 2 or FIGURES 9 and 10 of the accompanying drawings.

15 41. A method of supporting at least one breast, said method comprising suspending said breast in a sling or wrap of material and supporting the sling or wrap of material on a garment of the type specified or on a body of the wearer from underneath a garment of the type specified.

42. A method as claimed in claim 41 including supporting the sling/wrap from a location at or above an upper portion of the breast.

20

43. A method of supporting at least one breast substantially as herein described.

25 44. Breast support apparatus for supporting at least one breast from underneath a covering garment of the type specified, said apparatus including means for lifting and supporting said breast, said means being suspended, in use, from a location or locations

above the nipple of said breast, said location or locations being from the garment or on the body of the wearer from underneath the garment.

45. Apparatus as claimed in claim 44 in which said means for lifting and supporting the
5 breast comprises a sling or wrap of material.

46. Apparatus as claimed in claim 45 in which said means for lifting and supporting
said breast comprises a strip or the like that partially encircles the breast in use (and
acts, in use, on the outer part and underneath of the breast pulling the breast up and
10 inwardly towards the cleavage of the breasts).

47. Breast support apparatus in the form of a sling or wrap of material for suspending at
least one breast from a garment of the type specified in use, said apparatus including
suspension means for the sling/wrap of material, said suspension means being
15 attachable to a garment of the type specified to be worn with the breast support
apparatus.

48. Apparatus as claimed in claim 47 in which the sling/wrap of material is releasably
fastenable to the suspension means.
20

49. Breast support apparatus for supporting at least one breast from underneath a
covering garment, said apparatus comprising an adjustable sling or adjustable means for
encircling or partially encircling and supporting said breast, the size of said sling or
means encircling/partially encircling the breast being (automatically) adjustable to cater
25 for different sizes of breast and or size difference between two breasts of a wearer.

50. A garment, such as a bikini top, including two breast cups, each breast cup including a breast support apparatus, preferably, diagonally mounted or inclined on the associated cup, preferably extending from adjacent an upper apex of the associated cup and extending downwardly in use to a lower location on each cup.
- 5 51. Breast support apparatus for the garment as claimed in claim 50.
52. Breast support apparatus as claimed in claim 51 comprising a strip of material that acts in use to support the breast underneath and from an outside edge to partially encircle the breast, pulling the breast, in use, upwardly and inwardly towards the cleavage of the breasts.

ABSTRACT

BREAST SUPPORT APPARATUS

FIGURES 7 and 8 show a breast support apparatus 500 for use with any garment. The sling or wrap of material 501 is elasticated or 'stretchable' and non-slip, for example, being of cotton/polyester. The sling or wrap of material 501 has been shaped as shown with the ends 501a, 501b being narrowed to the width of elasticated, connecting strap 502, said ends 501a, 501b being joined to the strap and to one another, for example, by appropriate stitching. The ends 501a, 501b of the strap are passed through an opening in metal connecting buckle 503 of the connecting strap 502. The connecting strap 502 may be used to connect or hook the breast apparatus 501 to an appropriate location on an outer garment.

Fig1.

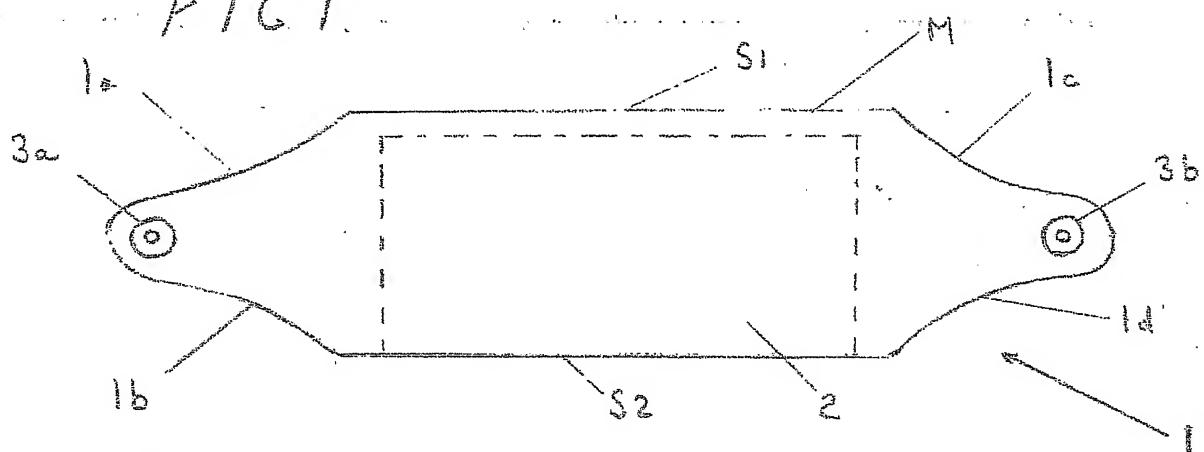


Fig2.

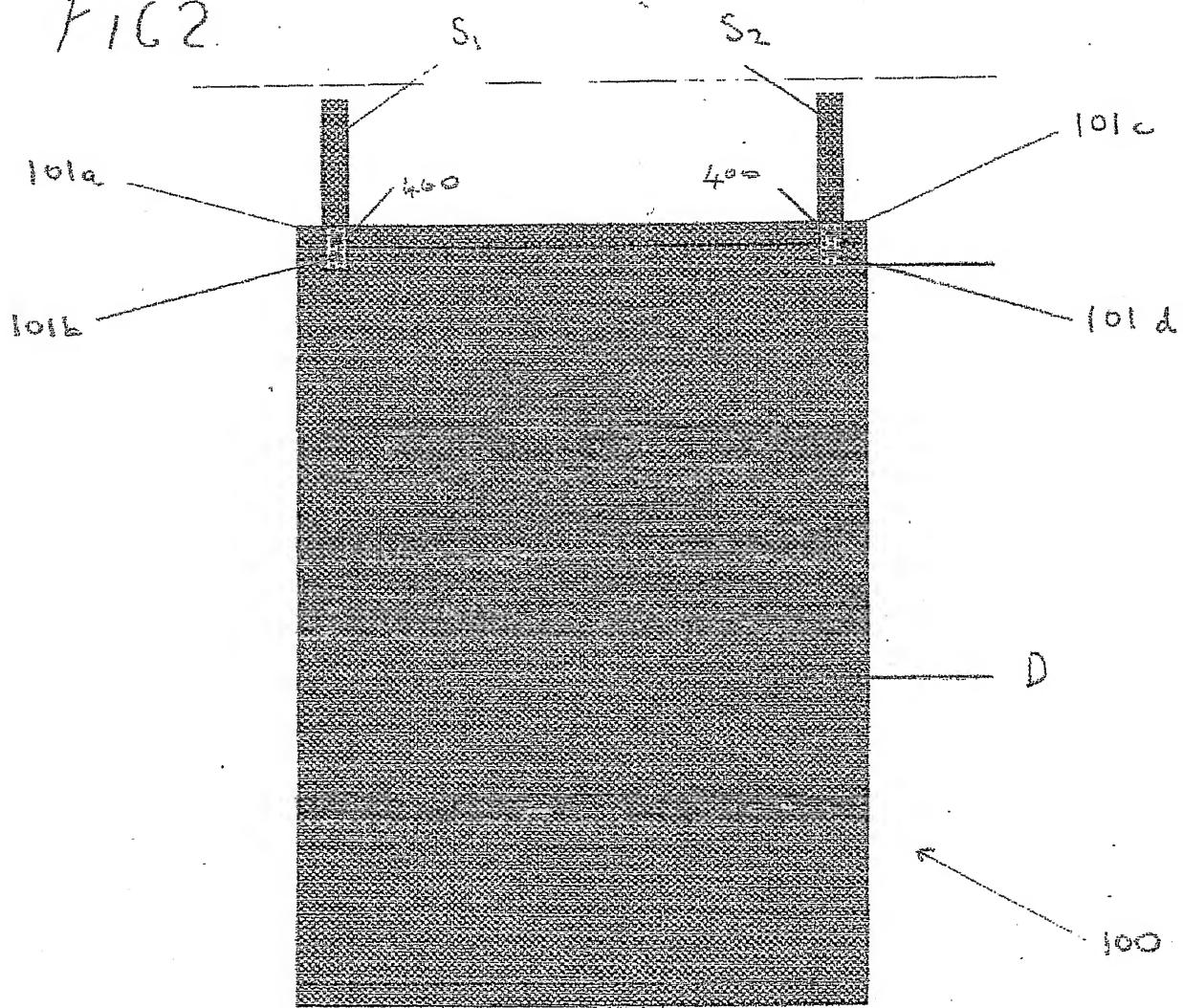


Fig 3.

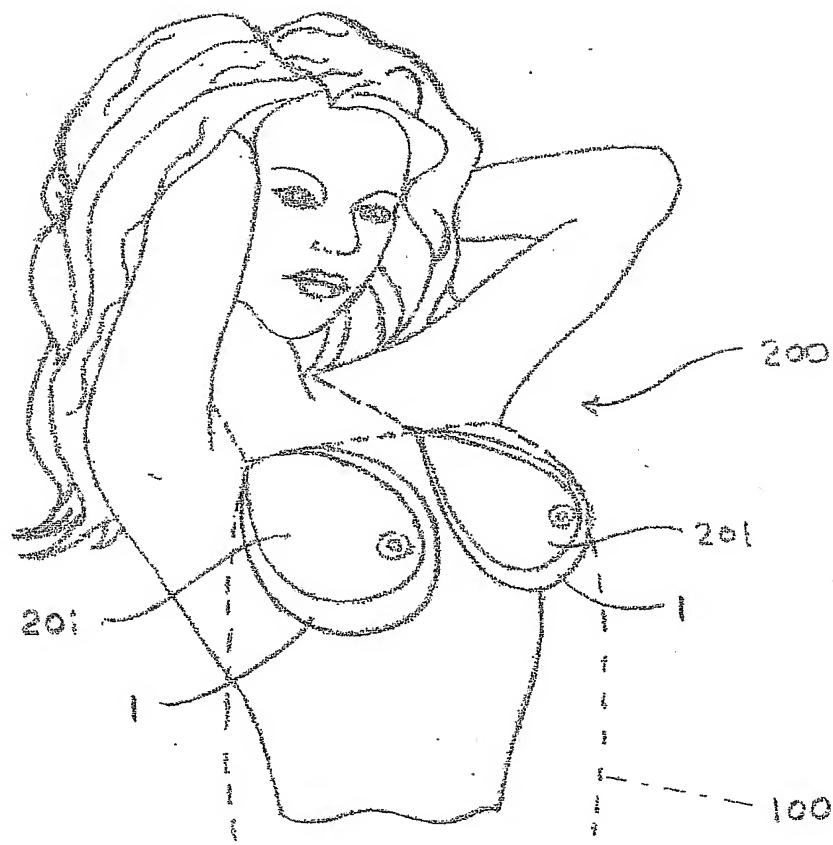


Fig 4.

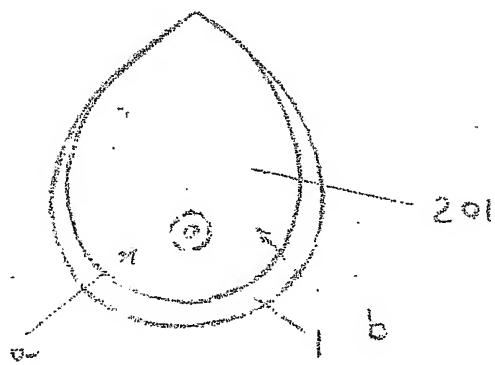


Fig 5a

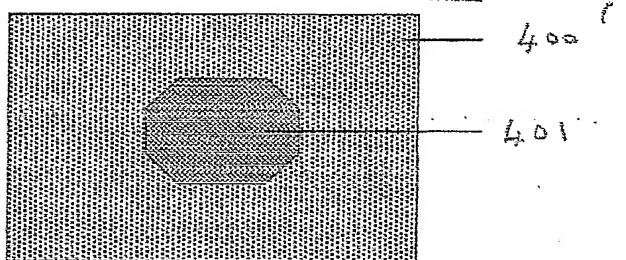


Fig 5b

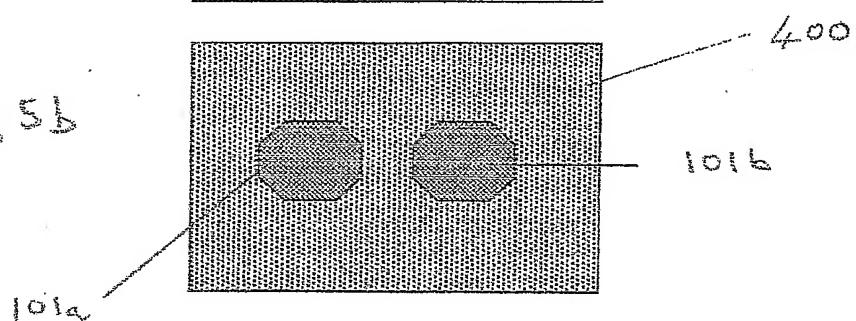


Fig 5c

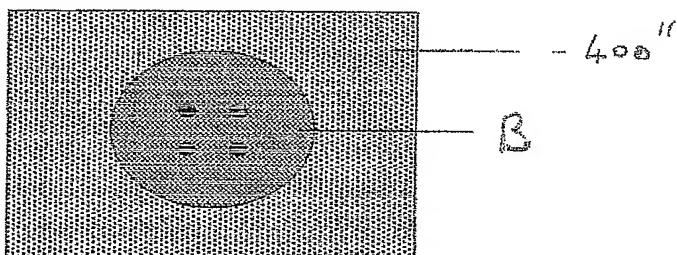


Fig 5d

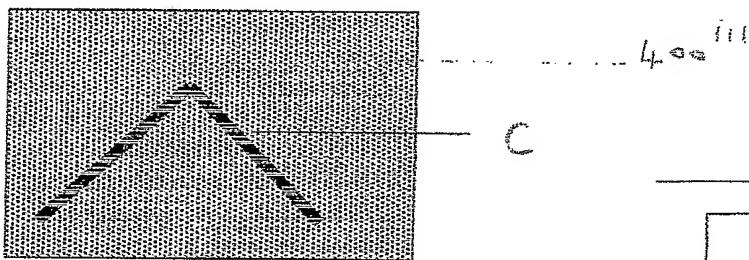


Fig 6a

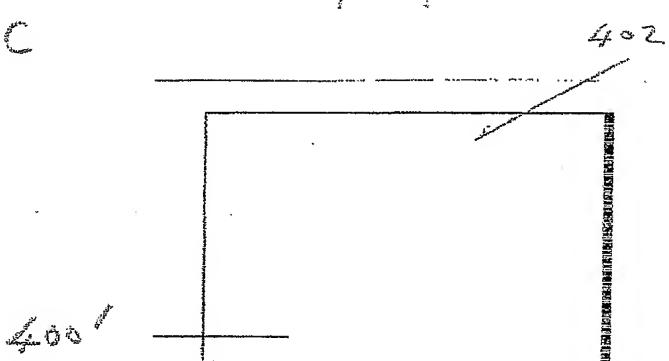


Fig 6b

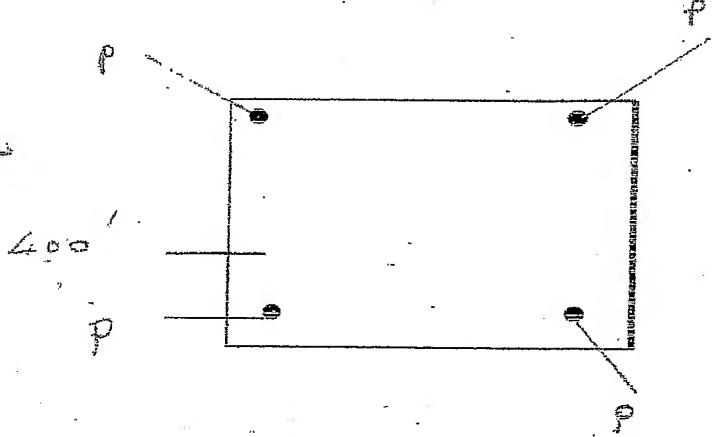


Fig 7.

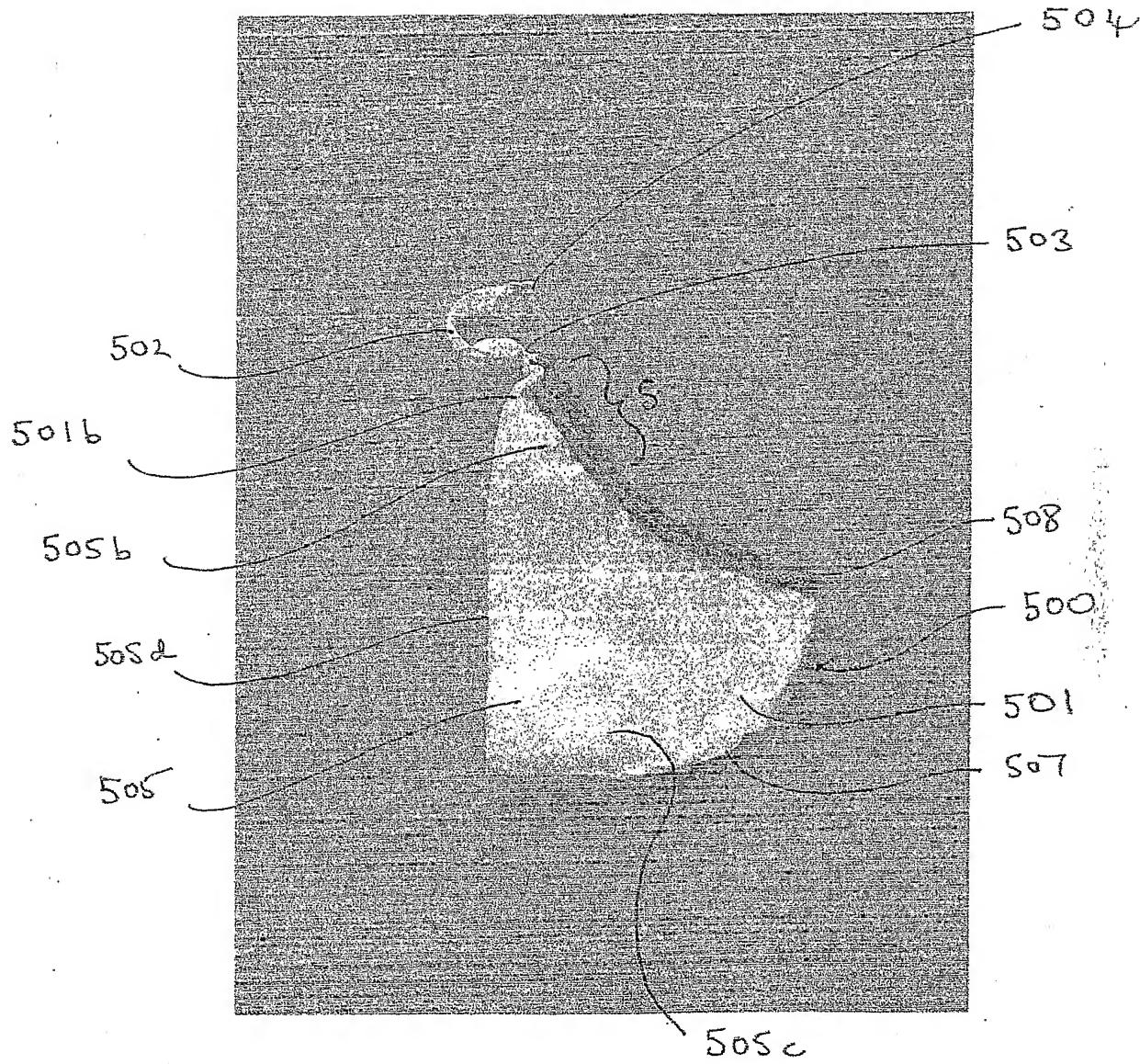


FIG 8

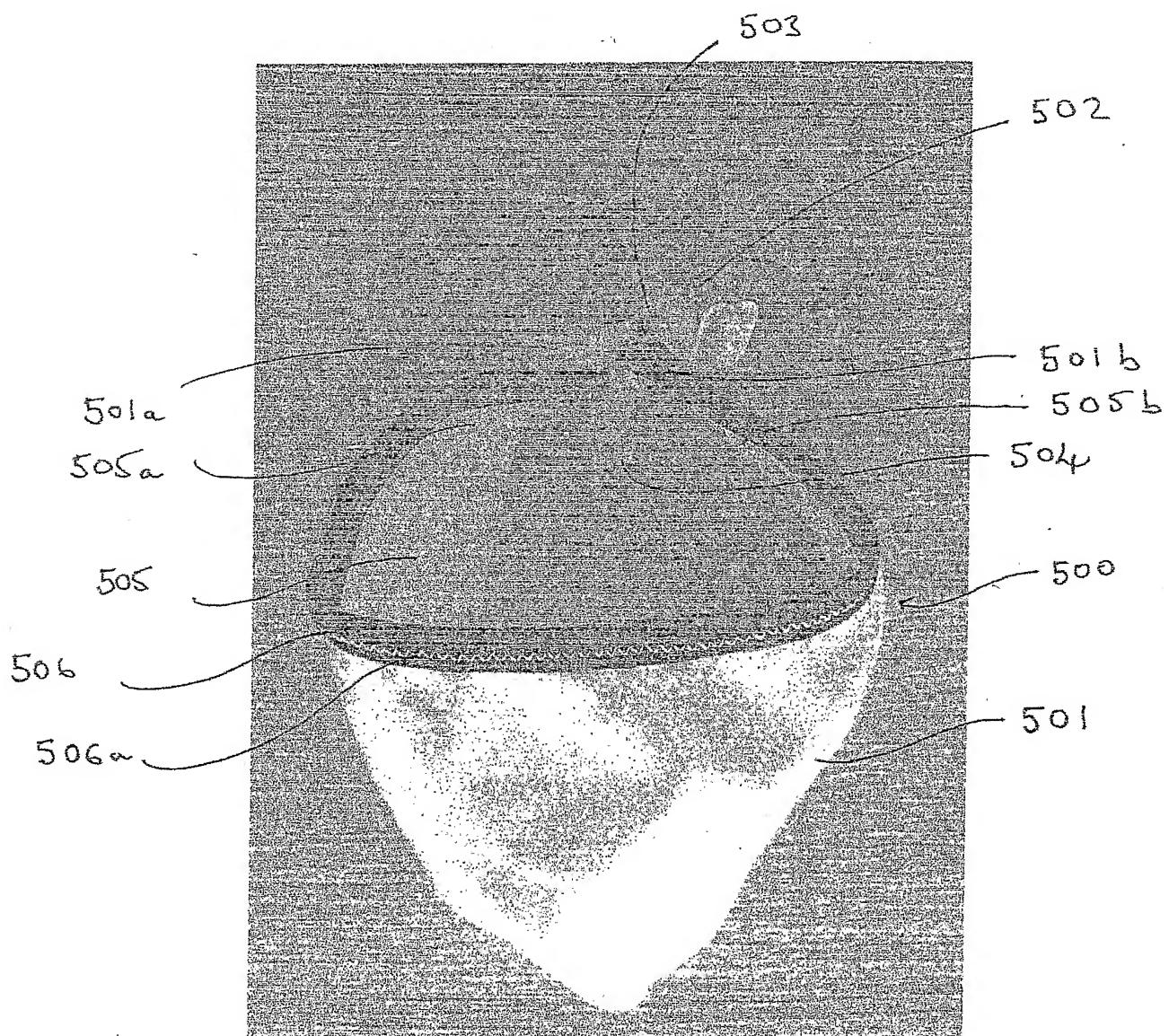


Fig. 8.

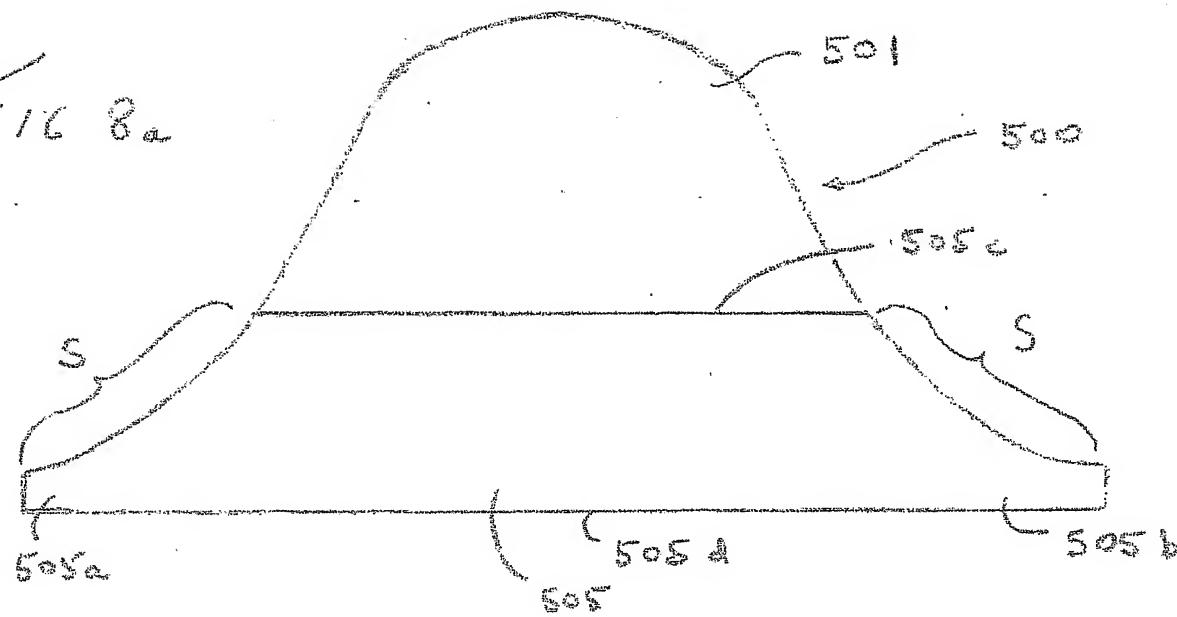
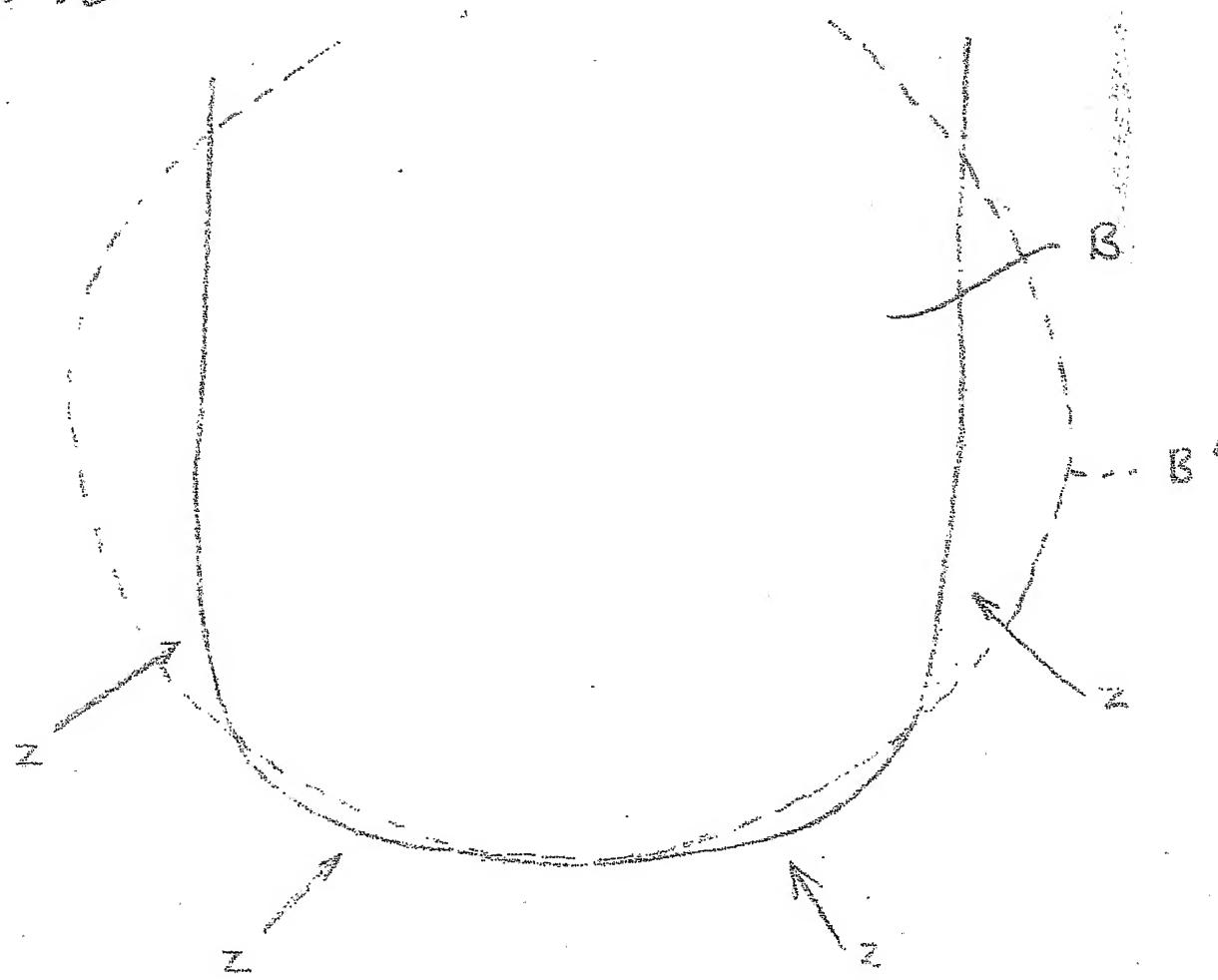


Fig. 30
Engg.



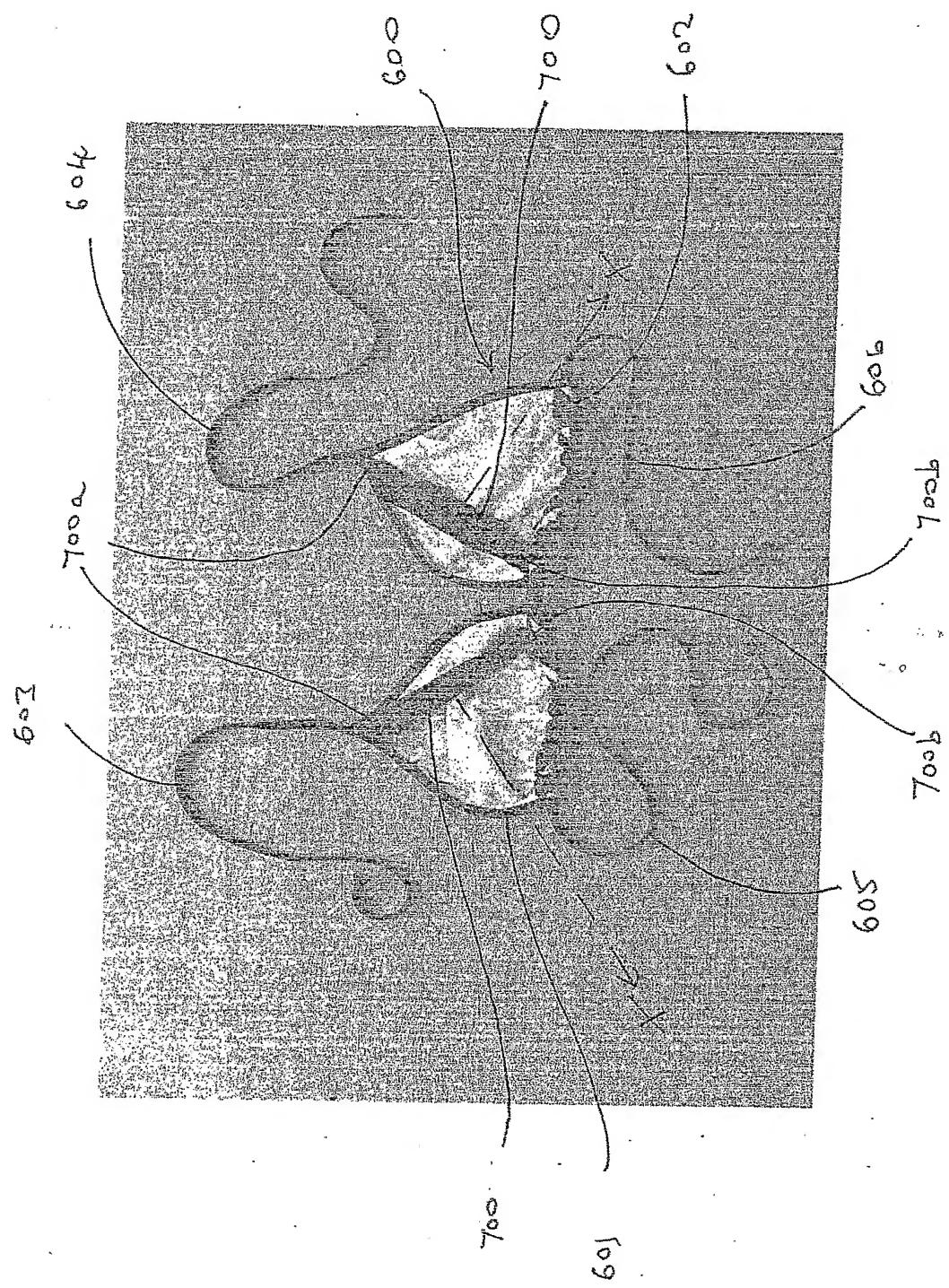
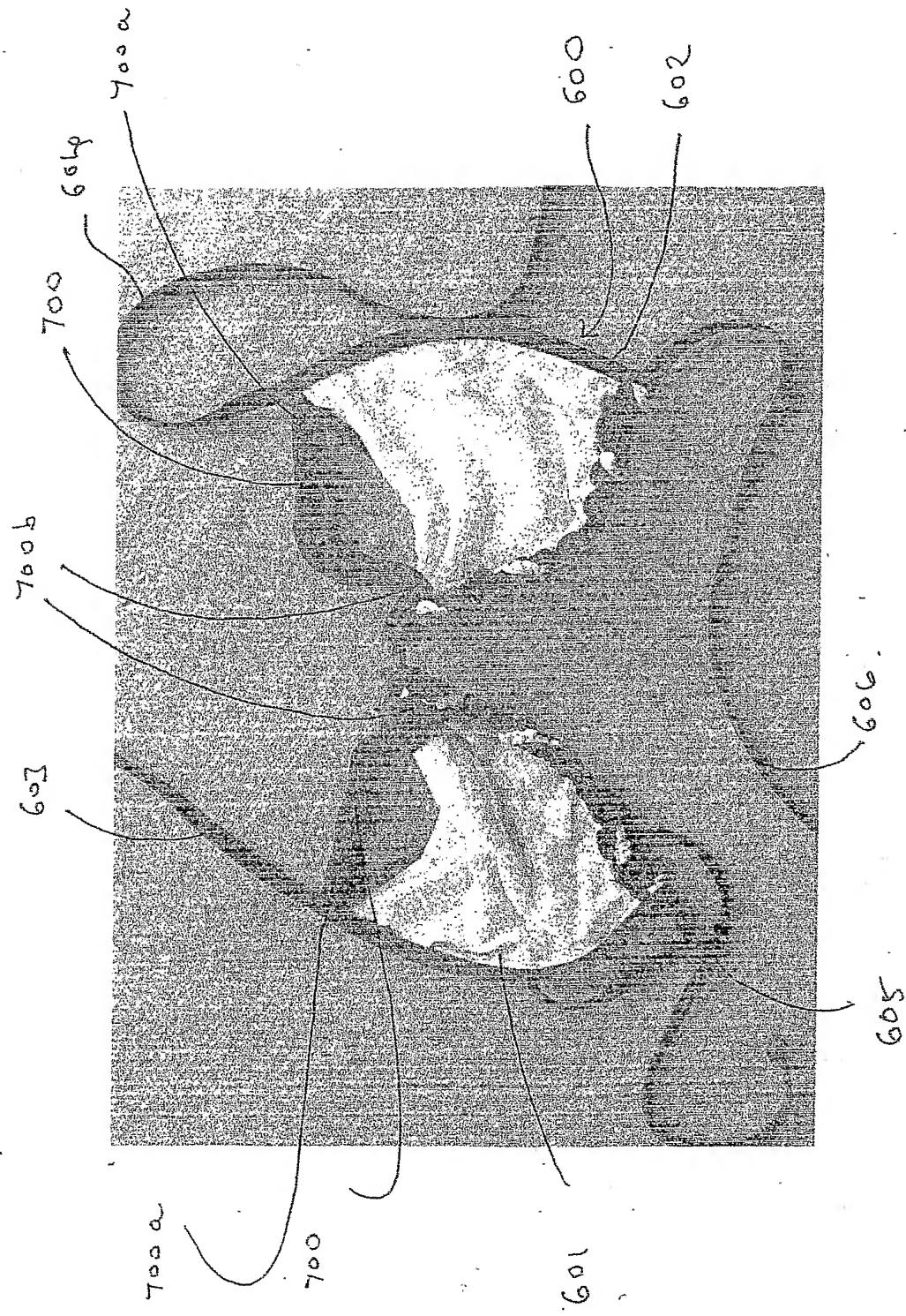


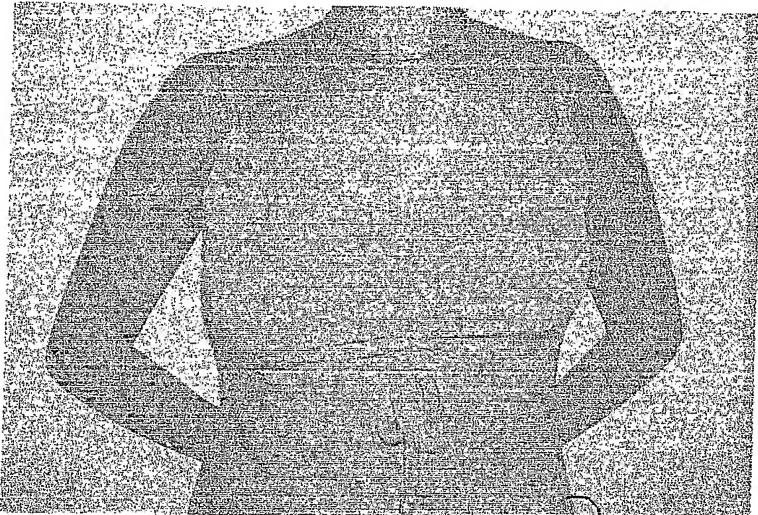
Fig 9.

Fig 10.



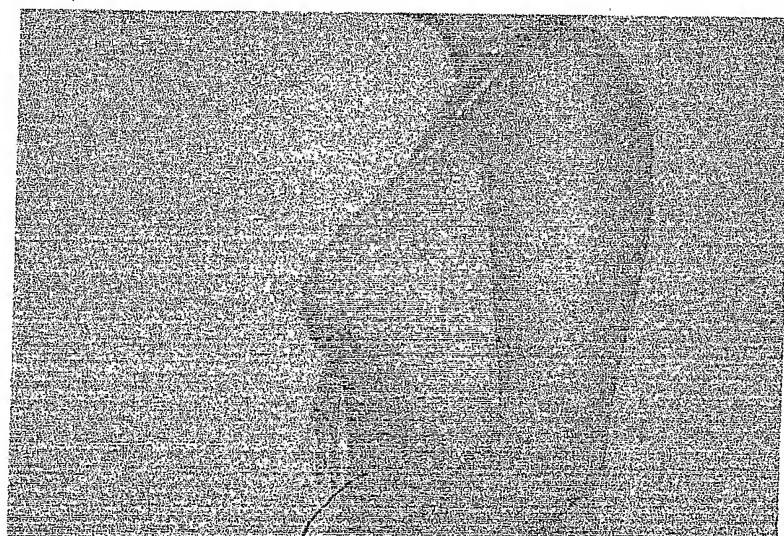
RHS Breast with the device and LHS breast without device

Fig 11.



D

Side profile of breast with device



D



THE PATENT OFFICE

31 JAN 2005

Received in Patents
International Unit

SS

PCT/G804/005352